



UNITED STATES PATENT AND TRADEMARK OFFICE

m

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/735,027

12/12/2003

Sumiya Nagatsuka

03747/LH

2460

1933 7590 02/09/2007

FRISHAUF, HOLTZ, GOODMAN & CHICK, PC

220 Fifth Avenue

16TH Floor

NEW YORK, NY 10001-7708

EXAMINER

BITAR, NANCY

ART UNIT

PAPER NUMBER

2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

02/09/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/735,027

Applicant(s)

NAGATSUKA, SUMIYA

Examiner

Nancy Bitar

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/02/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objection

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title should mention the distinctive feature(s) of the claimed invention

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: " figure 2 shows a flow chart of image processing that the **control block 11** implements, paragraph [0046];" and "Accordingly, for example, even when the image read by a medical image reading apparatus is greater than the specified output image size as shown in FIG. 3, **the image processing apparatus 10** limits an image area for determination of an image processing condition according to the specified output size (e.g. 14 inches by 17 inches) in the scanning range (e.g. 17 inches by 17 inches) of the image reading apparatus, paragraph [0053]". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the

Art Unit: 2624

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61; 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

3. Claims 11-12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 11 and 12 defines

Art Unit: 2624

a computer program and a recording medium embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed "a computer program and a recording medium" can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

Claim Rejections - 35 U.S.C. § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-12 are rejected under 35 U.S.C. § 102(b) as being anticipated by Tsuji et al (US 7,031,506).

As to claim 1, Tsuji et al teaches an image processing apparatus for processing an image composed of two-dimensional image data corresponding to an image reading

Art Unit: 2624

area of an image reader (image processing apparatus which, upon reading coded X-ray medical image from a storage medium, automatically determines effective regions for diagnosis, reads data corresponding to the determined regions, and displays the read data, column 4, lines 65-67, figure 20) , comprising: a specifying device for specifying a output-size within the image reading area of the image reader (setting of initial stream of data input, column 6, lines 40-50); a determining device for selecting a part of the two-dimensional image data in accordance with the output-size (area 17 that is identified by the diagnostic support unit 16 as positive, column 6, lines 35-38), analyzing image data in the selected part of the two-dimensional image data (the diagnostic support unit 16 analyzes the decoded image data 13 (ROI), column 6, lines 54-55), and determining a processing condition for the image data in the selected part on basis of the analyzing result (checks the disease location on the patient's body and outputs positive area data 17); and a processing device (input control unit 17) for processing the image data in the selected part with the determined processing condition (input control unit 14 determines which area in the encoded image input in step 22 should be concentrated on for further analysis based on positive area data 17 output from the diagnostic support unit 16, column 6, lines 60-65). Note that Tsuji et al teaches the output size within the image reading area according to a certain diameter of 8mm, 12 mm and 16 mm and is calculate where the surface area ($S = [\text{number of pixels contained in the shadow candidate}] \times [\text{surface area of one pixel}]$, column 8, lines 1-26)

As to claim 2, Tsuji et al teaches the image processing apparatus of claim 1, wherein said image comprises X-ray image (display of x-ray images, column 7, lines 9-11).

As to claim 3, Tsuji et al teaches the image processing apparatus of claim 1, wherein said determining device recognizes a significant data to diagnosis form the selected part of the two-dimensional image data (note that in figure 6 the diagram shows neural network for determining whether the extracted area is a positive test result or not, column 7, lines 28-32).

As to claim 4, Tsuji et al teaches the image processing apparatus of claim 3, wherein said determining device creates a cumulative histogram of the significant data and determining the processing condition according to the result of the cumulative histogram (figure 7A, 7B, 7C, and 7D are diagrams illustrating a hypothetical example of the shadow based diagnostic support process).

As to claim 5, Tsuji et al teaches the image processing apparatus of the claim 1, further comprising: a display for displaying a picture image of the two-dimensional image data with a trimming frame according to the output-size (image display unit, 15).

As to claims 6-10 differ from claims 1-5 only in that claims 6-10 are method claims whereas, claims 1-5 are apparatus claims. Thus, claims 6-10 are analyzed as previously discussed with respect to claims 1-5 above. Note that FIG. 20 is a block diagram of an image processing apparatus according to an embodiment of the present invention, designed to execute the image processing method described in FIG. 1.

As to claims 11-12 differ from claims 1-5 only in that claims 11-12 are computer claims whereas, claims 1-5 are apparatus claims. Thus, claims 11-12 are analyzed as previously discussed with respect to claims 1-5 above (see column 16, lines 31-38).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Reeves et al (US 2003/0095696) is cited to teach improvement and development of diagnostic tools for enabling a radiologist to review and interpret the vast amount of information that is obtained through an examination.

Yanagita et al (2004/0151358) is cited to teach an image diagnosis aid device adds diagnosis aid information such as a detection result of an abnormal shadow candidate to medical images to be image-diagnosed and outputs the medical images including the added diagnosis aid information on a CRT (Cathode Ray Tube) monitor, a liquid crystal monitor or the like.

Inquiries

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nancy Bitar whose telephone number is 571-270-1041. The examiner can normally be reached on Mon-Fri (7:30a.m. to 5:00pm).

Art Unit: 2624

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nancy Bitar

01/30/2007



JOSEPH MANCUSO
SUPERVISORY PATENT EXAMINER